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EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
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1764

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7

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/417,918

Applicant(s)

SASAKI ET AL.

Examiner

Jennifer A. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “honey-comb member” and “fin member” of claim 7 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: “5” and “5a” (pages 22-24) made in reference to Figure 9.
4. The drawings are objected to because the symbol “15”, indicating the “blocking portion”, should be added to the two unlabeled shaded regions of FIG. 9 (top left and bottom right).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings.

***Specification***

5. The abstract of the disclosure is objected to because of the following:
  - a. Use of legal phraseology should be avoided. Please note "comprises" (line 2), "thereof" (line 5), and "said" (lines 17, 20).
  - b. The abstract exceeds 150 words in length.

Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure:

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Objections***

6. Claims 12 and 20 are objected to because of the following informalities:
  - a. Claim 12: "are" (line 8) should be replaced with "formed" for proper grammatical usage and consistency in the claims.
  - b. Claim 20: --through-- should be inserted after "flowing" (line 17) for proper grammatical usage.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1, the language of the claim is directed to a method limitation which renders the claim vague and indefinite as it is unclear as to what structural elements the applicant(s) is/are attempting to recite by “fluids of different temperature...” (lines 12-18) since “fluids”, “a heat”, “the specific gas”, and “temperature” are not elements of the apparatus. Furthermore, it is unclear as to what the applicants are attempting to recite by, “different temperature zones” (lines 11-12). Also, “temperature zones” lacks proper positive antecedent basis. Also, it is unclear as to what applicants are attempting to recite by “a heat” (line 14). Also, it is unclear as to what is intended by “a specific gas” (line 10). Likewise, claim 12, line 10; claim 16, lines 8-9; claim 19, line 11; and claim 20, line 10.

With respect to claim 3, it is unclear as to what the applicants are attempting to recite by, “at a rotational central portion thereof” (lines 2-3).

With respect to claim 4, it is unclear as to how the “two sections” (line 10) made in reference to “the supply paths” are related to the “two sections” (line 11) made in reference to “the introduction paths”. Furthermore, it is unclear as to the structural relationship between these

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“two sections” and the other elements of the apparatus. Furthermore, “the blocks” (line 6) lacks proper positive antecedent basis.

With respect to claim 5, the language of the claim is directed to a method limitation which renders the claim vague and indefinite as it is unclear as to what structural elements the applicant(s) is/are attempting to recite by “the mixed gas is fed...of the rotating body” (lines 2-7) since “the mixed gas” and “specific gas” are not an element of the apparatus.

With respect to claim 6, it is unclear as to what the applicants are attempting to recite by, “the number of the blocks.... related to another one thereof”(lines 5-9). Furthermore, it is unclear as to what is intended by, “another one thereof” (lines 7-8, 9).

With respect to claim 8, it is unclear as to the structural relationship between “a supply port” (line 2) and the other elements of the apparatus. Likewise, “a discharge port” (line 4).

With respect to claim 9, “high” (line 3) is a relative term and is therefore considered vague and indefinite. Furthermore, “the released mixed gas” (lines 2-3) lacks proper positive antecedent basis.

With respect to claims 10, 14, and 17, the language of the claim is directed to a method limitation which renders the claim vague and indefinite as it is unclear as to what structural elements the applicant(s) is/are attempting to recite by “the mixed gas is a gas containing carbon dioxide...” (lines 1-7) since “the mixed gas” and “lithium carbonate” are not elements of the apparatus. Also, “mixed gas” and “specific gas” lack proper positive antecedent basis as they are merely recited in an intended use clause (claim 1, lines 1-2).

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With respect to claims 11, 15, and 18, the language of the claim is directed to a method limitation which renders the claim vague and indefinite as it is unclear as to what structural elements the applicant(s) is/are attempting to recite by “a temperature necessary for performing...” (lines 1-5) since “temperature” is not an element of the apparatus. Furthermore, “the carbon dioxide” (lines 3, 5), “the absorption reaction” (lines 2-3), and “the release reaction” (line 4) lack proper positive antecedent basis.

With respect to claim 12, the language of the claim is directed to a method limitation which renders the claim vague and indefinite as it is unclear as to what structural elements the applicant(s) is/are attempting to recite by “the mixed gas set to a temperature zone...” (lines 14-24) since “the mixed gas”, “temperature zone”, “specific gas”, “absorption reaction”, “a release reaction”, “a fluid”, “a heat”, and “temperature” are not elements of the apparatus.

With respect to claim 13, it is unclear as to how “a fluid of a temperature necessary for performing a release reaction” (lines 5-6) is related to “a fluid of a temperature necessary for performing a release reaction” set forth in claim 12 (lines 17-18).

With respect to claim 16, it is unclear as to how “a rotating position” (line 14) is related to “a rotating position” set forth in line 12.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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8. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Panzica et al. (U.S. 5,057,128).

With respect to claims 1, 12 and 16, Panzica et al. disclose a gas separator for separating a specific gas from a mixed gas comprising: an outer casing **36** (FIG. 1); a rotating body (elements **14** mounted via means **12** and base member **16**; FIG. 1) within casing **36** having a first (solid arrows) and a second flow path (dotted arrows); and a drive means **59** mounted to the casing (see FIG. 3) to rotate the rotating body (direction indication **56**; column 5, lines 17-20).

With respect to claim 2, Panzica et al. disclose a plurality of fan-shaped hollow blocks arranged in a circumferential direction (FIG. 1, 2) having gas adsorption/releasing material **14a**, **14b** disposed within (column 3, lines 26-29, 51-55).

With respect to claim 3, Panzica et al. disclose a hollow static portion **26** at the rotational central portion (FIG. 1, 2, 3).

With respect to claim 4, Panzica et al. disclose a static portion **26** divided into two sections (via duct means **46**, FIG. 2) to form introduction paths and supply paths, and sealing portions **51**, **54** between the static portion and rotating body (**51**) and between the rotating body and casing (**54**) for dividing the supply paths into a plurality of sections.

With respect to claim 5, Panzica et al. disclose a plurality of rotating positions (column 5, lines 17-20) and blocking portions ("permeable... axial direction"; column 3, lines 22-26).

With respect to claim 6, Panzica et al. disclose the division of blocks **22** to form ones related to an absorption reaction and ones related to a releasing reaction (column 4, lines 60-68).



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With respect to claim 7, Panzica et al. disclose a honeycomb-like member provided in the flow paths (column 3, lines 51-55).

With respect to claim 8, Panzica et al. disclose a casing **36** provided with a supply port **40** and a discharge port **45** (see FIG. 3; column 4, lines 3-12).

With respect to claim 9, Panzica et al. disclose a casing **36** provided with a recovery port **43, 50** (see FIG. 3) for the concentrated gas.

With respect to claims 10, 14 and 17, no structural limitations are stated since the mixed gas, specific gas, and the gas absorption/releasing material are not elements of the apparatus.

With respect to claims 11, 15 and 18, no structural limitations are stated since temperature is not an element of the apparatus.

With respect to claim 13, the comments with respect to claims 2, 3 and 4 above apply.

With respect to claim 19, the comments with respect to claims 1, 2, 3 and 4 above apply.

With respect to claim 20, the comments with respect to claims 1, 2 and 5 above apply.

Instant claims 1-20 read on the apparatus of Panzica et al.

9. Claims 1-6 and 8-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al. (U.S. 5,464,468).

With respect to claim 1, 2 and 16, Tanaka et al. disclose a gas separator for separating a specific gas from a mixed gas comprising: an outer casing (FIG. 1); a rotating body **1** disposed

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inside the casing (FIG.1) having a first **H, H'** and a second **G, G'** flow path; and a drive means **2** mounted to the casing (FIG. 1) to rotate the rotating body **1**.

With respect to claim 2, Tanaka et al. disclose a plurality of fan-shaped hollow blocks **4** arranged in a circumferential direction (FIG. 2) having gas adsorption/releasing material **7, 8** disposed within (column 4, lines 18-21).

With respect to claim 3, Tanaka et al. disclose a hollow static portion at the rotational central portion (defined by inner peripheral wall **1b**; FIG. 1).

With respect to claim 4, Tanaka et al. disclose prior art use of a static portion divided into two sections (dividing flow of **G'** and **H**) to form introduction paths and supply paths (FIG. 8, 9). Tanaka also discloses sealing portions **18** between the static portion and rotating body and between the rotating body and casing (column 6, lines 35-45).

With respect to claim 5, Tanaka et al. disclose a plurality of rotating positions (column 4, lines 41-58; FIG. 2) and blocking portions **15** (column 5, lines 1-8).

With respect to claim 6, Tanaka et al. disclose the division of blocks **4** to form ones related to an absorption reaction **X** and ones related to a releasing reaction **Y** (see FIG. 2).

With respect to claim 8, Tanaka et al. disclose a casing provided with a supply port **13** and a discharge port **14** (FIG. 1).

With respect to claim 9, Tanaka et al. disclose a casing provided with a recovery port **12** for the concentrated gas **G'** (FIG. 1).

With respect to claims 10, 14 and 17, no structural limitations are stated since the mixed gas, specific gas, and the gas absorption/releasing material are not elements of the apparatus.

With respect to claims 11, 15 and 18, no structural limitations are stated since temperature is not an element of the apparatus.

With respect to claim 13, the comments with respect to claims 2, 3 and 4 above apply.

With respect to claim 19, the comments with respect to claims 1, 2, 3 and 4 above apply.

With respect to claim 20, the comments with respect to claims 1, 2 and 5 above apply.

Instant claims 1-6 and 8-20 read on the apparatus of Tanaka et al.

10. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Morlec et al. (FR 2 720 294).

With respect to claims 1, 2 and 16, Morlec et al. disclose a gas separator comprising:  
An outer casing (**2**, FIG. 1); a rotating body **1** disposed inside the casing **2** having a first **9** and a second flow path **10**; and a drive means (directional arrow, FIG. 1) to rotate the rotating body **1**.

With respect to claim 2, Morlec et al. disclose a plurality of fan-shaped hollow blocks arranged in a circumferential direction (FIG. 5, 6) having gas adsorption/releasing material **M** disposed within.

With respect to claim 3, Morlec et al. disclose a hollow static portion **8** at the rotational central portion (FIG. 1, 3, 4).

With respect to claim 4, Morlec et al. disclose a static portion **8** divided into two sections **9, 10** forming introduction and supply paths (FIG. 4), and sealing portions **11** (FIG. 1) dividing the supply paths into two portions.

With respect to claim 5, Morlec et al. disclose a plurality of rotating positions **A, B, C, D** (FIG. 2) and blocking portions **t1, t2, t3** (portions not undergoing absorption/desorption processes as in **B1, B2**; FIG. 5).

With respect to claim 6, Morlec et al. disclose the division of blocks to form ones related to an absorption reaction **A** and ones related to a releasing reaction **B** with the number of blocks associated with the releasing reaction (FIG. 5).

With respect to claim 7, Morlec et al. disclose a honeycomb-type member provided in the first and second flow paths (FIG. 1).

With respect to claim 8, Morlec et al. disclose a casing **2** provided with a supply port **3** and a discharge port **4** (FIG. 1).

With respect to claim 9, Morlec et al. disclose a casing provided with a recovery port **9** for the concentrated gas **F2** (FIG. 5).

With respect to claims 10, 14 and 17, no structural limitations are stated since the mixed gas, specific gas, and the gas absorption/releasing material are not elements of the apparatus.

With respect to claims 11, 15 and 18, no structural limitations are stated since temperature is not an element of the apparatus.

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With respect to claim 13, the comments with respect to claims 2, 3 and 4 above apply.

With respect to claim 19, the comments with respect to claims 1, 2, 3 and 4 above apply.

With respect to claim 20, the comments with respect to claims 1, 2 and 5 above apply.

Instant claims 1-20 read on the apparatus of Morlec et al.

### *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In addition to the prior art stated above under section 35 U.S.C. 102, the following references are provided to illustrate that the instant claims cannot be considered novel in view of Edwards, Ogata et al., Boudet et al., Macriss et al., and Olikier et al.

- a. Edwards discloses a rotating bed absorber comprising a casing, rotating body, and drive means for rotating the body to a predetermined position.
- b. Ogata et al. disclose a rotary gas treating apparatus comprising a casing, rotating body, drive means, sealing members, and a plurality of flow paths and ducts.
- c. Boudet et al. disclose a rotary gas treating apparatus comprising a casing, a rotating body, drive means, and a hollow static portion divided into a plurality of introduction and supply paths.
- d. Macriss et al. disclose a rotary gas treating apparatus comprising a casing, a rotating body, drive means (indicated by directional arrow at axis), a plurality of plural flow paths provided with a honey comb member (see FIG. 2).
- e. Olikier et al. disclose a rotary gas treating apparatus comprising a casing, a rotating body, drive means, and a plurality of flow paths.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is 703-305-4951.

The examiner can normally be reached on 8:30 am - 5:30 pm M-F, every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian C. Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

JAL  
July 26, 2002



Hien Tran

**HIEN TRAN  
PRIMARY EXAMINER**